

REMARKS

Claims 1, 8, 11, 14, 17 and 23 have been amended, and claim 7 has been cancelled. Claims 1-6 and 8-23 are pending, of which claims 1, 8, 11, 14, 17 and 23 are independent claims.

Allowable Claims

Claims 8, 11-20 and 23 were objected to as being dependent on a rejected base claim but were deemed allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Claims 8, 11, 14, 17 and 23 have been re-written in independent form, and accordingly claims 8, 11-20 and 23 are now in allowable form.

Rejections under §102 and §103

Claims 1, 2, 4-7, 9 and 10 were rejected under 35 U.S.C. §102(b) as being anticipated by Bard, U.S. Patent No. 4,686,361, and these claims as well as claims 21-22 were rejected under 35 U.S.C. §102(b) as being anticipated by Ebina, U.S. Patent No. 5,943,233. These rejections are respectfully traversed with respect to these claims as amended herein.

Claim 1 has been amended to recite that the second member is elongated and that the axis of relative rotation between the first and second members extends in the direction of elongation of the second member. Support for this aspect of claim 1 is in the application as filed, specifically in Figures 1, 2, 7 and 8 for example. The purpose of the measurement apparatus of claim 1 is to determine a truly rotational angular position which as explained below is not the item of interest in either Bard or Ebina despite their superficial similarity. The measurement apparatus of claim 1 could be used to determine the rotational position of a motor shaft, for example, which spins about its own axis of elongation.

Both Bard and Ebina are seen to show joystick-type devices that employ a light source, detector, and a reflective surface on the bottom of a joystick handle

or similar member. In both cases, however, the motion of interest is not rotation of a member about its own axis of elongation, but rather the pivoting of the member about its point of attachment to a base. In Bard, for example, Figure 1 shows a joystick handle 1 that is tilted to a tilted position 1' and the corresponding tilting of the reflective surface 4'. Bard appears to detect motion of the joystick handle throughout the X-Y plane, for example by using four detectors for detecting each "primary" direction of movement (see paragraph beginning col. 4, line 18). To the extent that this detection can be viewed as the detection of an angle, it is only an angle about a line normal to the X-Y plane (e.g. about the line connecting the light source and the ball 2 in Bard. Ebina is similar. Neither of these references shows rotation of an elongated member about its own axis of elongation, such as shown in the above-referenced Figures of the present application, nor any mechanism for detecting it. Thus, neither Bard nor Ebina is seen to anticipate amended claim 1 under 35 U.S.C. § 102(b).

As the other rejected claims incorporate the same features of claim 1 as discussed above, these claims are likewise seen as not being anticipated by Bard nor Ebina. Accordingly, all of these claims are seen to be allowable.

Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Response, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney.

Petition is made for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-3661.

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If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 616-2900, in Westborough, Massachusetts.

Respectfully submitted,



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